

sociated with *Lantana camara* L. Not common.

This species is allied to *P. corymbosa* Rottler, but markedly differs from it as shown in Table 1.

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ON THREE NEW SPECIES OF WHITEFLIES OF THE TRIBE DIALEURODINI SAMPSON, 1943 (ALEYRODIDAE : HOMOPTERA) FROM INDIA¹

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(With nine text-figures)

During the survey of whiteflies from different parts of India from 1987-1990 three new species of whiteflies belonging to the tribe Dialeurodini, viz. *Cockerelliella rotunda* sp. nov., *Dialeurodes (Gigaleurodes) splendens* sp. nov. and *Dialeuronomada saklespurensis* sp. nov. were collected respectively from *Capparis* sp. (Capparaceae), *Homonoia riparia* (Euphorbiaceae) and *Dimocarpus longon* (Sapindaceae). These species are described and illustrated.

Cockerelliella rotunda sp. nov. (Figs. 1-4)

Pupal case: White, without wax secretion, submargin folded downwards, broadly elliptical, widest across second abdominal segment, 1.03-1.06 mm long and 0.96-0.99 mm wide; found singly and in groups on the lower surface of leaves.

Margin: Crenulate, 24-27 crenulations in 0.1 mm; thoracic and caudal tracheal pores distinct with chitinised rim; anterior and posterior marginal setae 20 μ m and 17.5 μ m long respectively.

Dorsal surface: Three pairs of fimbriate setae — cephalic setae 35 μ m long, first abdominal setae 35-40 μ m long and eighth abdominal setae 17.5-22.5 μ m long; submargin 205 μ m wide, separated from dorsal disc only on cephalothorax by cephalothoracic suture; longitudinal moulting suture reaches margin, transverse moulting suture reaches submargin. Cephalothorax with five pairs of submarginal

fimbriate setae each 22.5 μ m long. Subdorsum with a row of four pairs of fimbriate setae and a pair of pointed setae on abdomen, each 22.5-27.5 μ m long. Numerous tubercles on cephalothorax evident. Median darker area present on each abdominal segment suture and characteristic markings evident from abdominal segment sutures laterad. Dorsum completely covered with elongated or polygonal markings; pores and porettes evident.

Vasiform orifice subcordate, slightly notched at the caudal end, wider than long, 47.5-52.5 μ m wide and 45-47.5 μ m long; operculum similarly shaped, 35-37.5 μ m wide and 27.5-30 μ m long, filling the orifice and concealing the lingula. Caudal tracheal furrow 137.5-145 μ m long and 10 μ m wide with polygonal markings evident, whereas thoracic tracheal furrows not indicated.

Ventral surface: Ventral abdominal setae 30 μ m long and 45-50 μ m apart. Thoracic and caudal tracheal folds distinct without stipples or sculpturing.

Host: *Capparis* sp. (Capparidaceae).

Material examined: Holotype: *Capparis* sp., Munchirai (Tamil Nadu), 3 August 1987,

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Coll. K. Regu.

Paratypes: 18 pupal cases on slides bearing the same details as of holotype. Of these one paratype deposited in the collections of Division of Entomology, Indian Agricultural Research Institute, New Delhi.

This species resembles *Cockerelliella zingiberæ* Sundararaj and David (1991a) in the presence of cephalothoracic fold and differs from it in the presence of fimbriate dorsal setae.

Dialeurodes (Gigaleurodes) splendens sp. nov.
(Figs. 5-7)

Pupal case: Oval, white, without wax; 0.76-0.79 mm long and 0.55 mm wide, found on the lower surface of leaves.

Margin: Irregularly crenulate, thoracic and caudal tracheal pores with internal teeth evident, anterior marginal setae 20 µm long, posterior marginal setae 25-30 µm long.

Dorsal surface: Four pairs of dorsal setae — cephalic setae 35-50 µm long, first abdominal setae 17.5 µm long, eighth abdominal setae cephalo-laterad of vasiform orifice, 2.5 µm long and submarginal caudal setae 10-15 µm long. Longitudinal moulting suture reaches margin and transverse moulting suture reaches subdorsum. Six pairs of submarginal setae — one pair on cephalic region and five pairs on abdomen, each 20-32.5 µm long; a pair of minute setae below the vasiform orifice within the caudal furrow 5 µm long. Subdorsal mesothoracic and metathoracic setae each 27.5 µm long. Tubercles running along cephalothoracic and abdominal segment sutures prominent. Dorsum completely covered with tubercles. Seventh and eighth abdominal segments are of equal size (30 µm).

Vasiform orifice subcordate, wider than long, 47.5-52.5 µm wide and 45-47.5 µm long; operculum similarly shaped, wider than long, 32.5-35 µm wide and 30-32.5 µm long, filling the orifice and concealing the lingula. Caudal tracheal furrow distinct, 87.5 µm long and 20 µm wide with numerous round markings.

Thoracic tracheal furrow indistinct.

Ventral surface: Ventral abdominal setae 20 µm long and 35 µm apart; a pair of minute setae at the base of rostrum evident.

Host: *Homonoia riparia* Lour. (Euphorbiaceae).

Material examined: Holotype: *Homonoia riparia*, Rajapalayam (Tamil Nadu), 11 June 1989, Coll. K. Regu.

Paratypes: Four pupal cases on slides bearing the same details as of holotype. One paratype deposited in the collections of Division of Entomology, Indian Agricultural Research Institute, New Delhi.

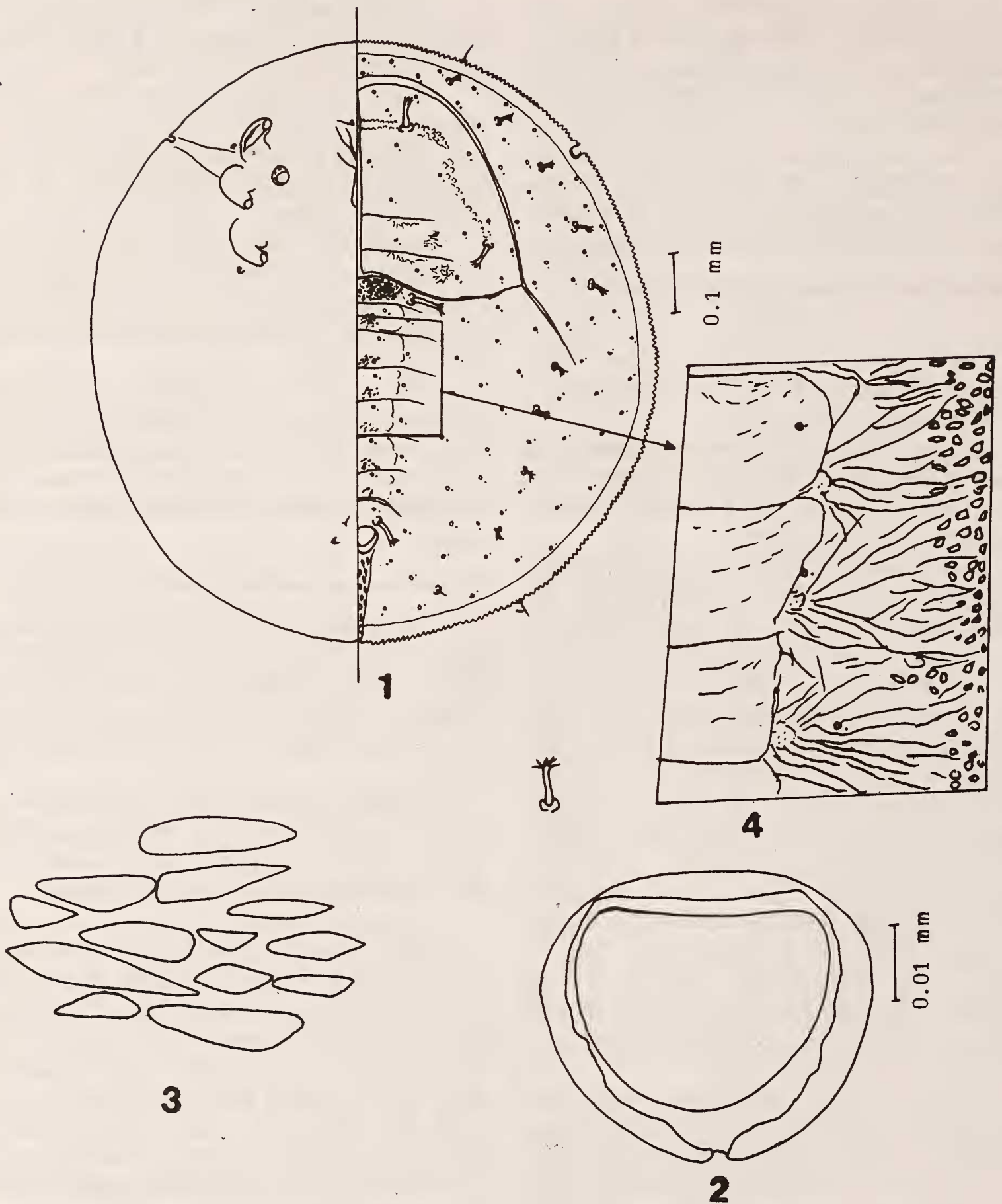
This species resembles *Dialeurodes (Gigaleurodes) multipori* Takahashi (1932) in the presence of tubercles on dorsum and differs from that in the presence of meso- and metathoracic setae and tubercles along segment sutures.

Dialeuronomada saklespurensis sp. nov. (Figs. 8-9)

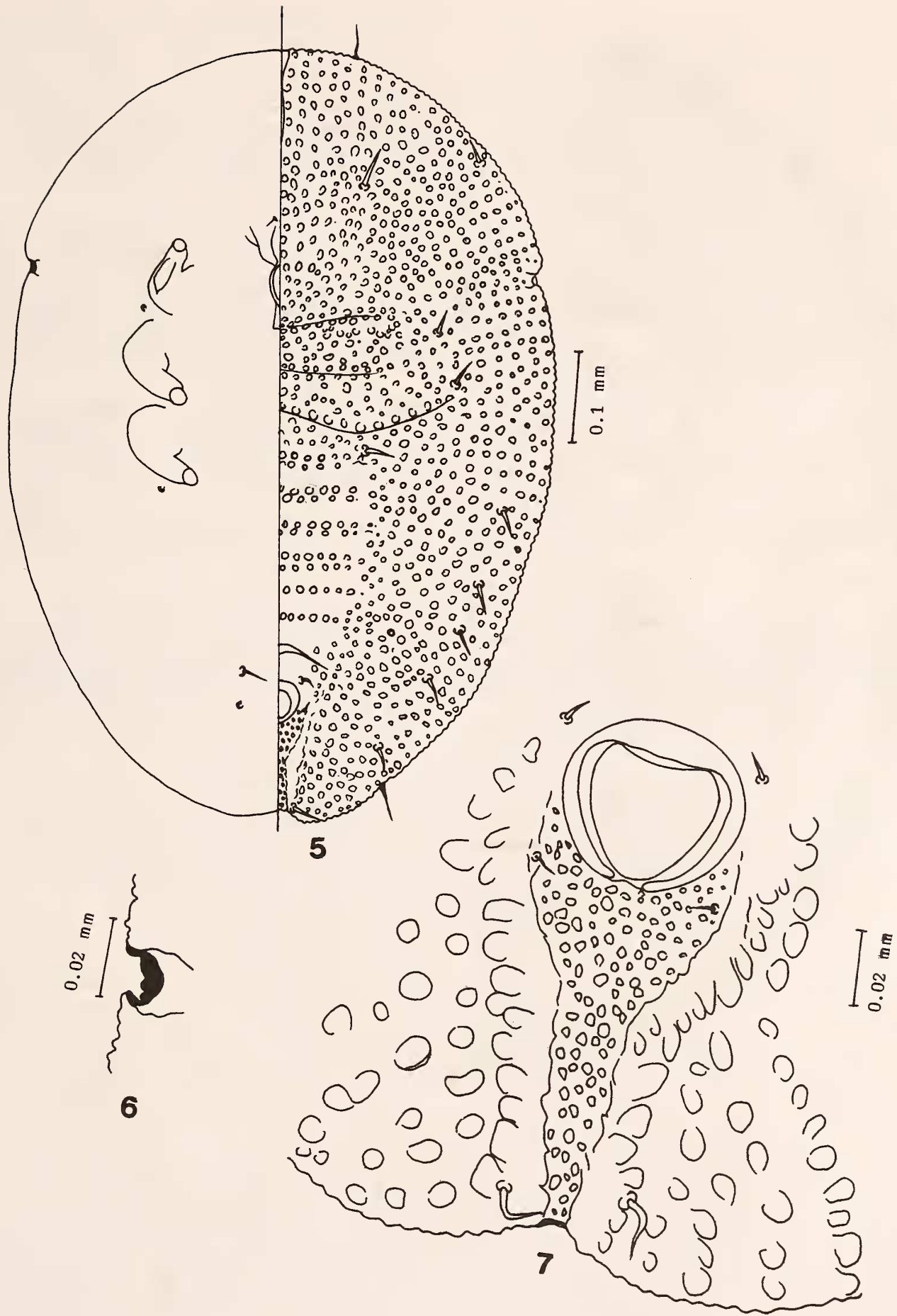
Pupal case: White and very thin pupal case with a little powdery wax around margin and on dorsum; oval, broadest across third abdominal segment; 1.00-1.14 mm long and 0.87-0.91 mm wide; found singly on the lower surface of leaves.

Margin: Smoothly crenulate, thoracic and caudal tracheal pore areas differentiated from margin; anterior marginal setae (broken) and posterior marginal setae 25-32.5 µm long.

Dorsal surface: Four pairs of dorsal setae — cephalic setae 12.5 µm long, first abdominal setae 5 µm long, eighth abdominal setae 45 µm long and submarginal caudal setae 20-22.5 µm long. Submargin separated from dorsal disc by a thin furrow and submargin with suture-like lines running mesad from margin; a row of 11 pairs of submarginal setae — five pairs on cephalothorax and six pairs on abdomen each 22.5-27.5 µm long; a prominent peripheral row of papillae laterad of abdominal segments and pro-mesothoracic segments on subdorsum, the papillae near the vasiform orifice enlarged; pro-



Figs. 1-4. *Cockerelliella rotunda* sp. nov.
 1. Pupal case; 2. Vasiform orifice; 3. Dorsal markings; 4. Median area of abdomen enlarged.



Figs. 5-7. *Dialeurodes (Gigaleurodes) splendens* sp. nov.

5. Pupal case; 6. Thoracic tracheal pore with margin; 7. Vasiform orifice with caudal tracheal furrow.

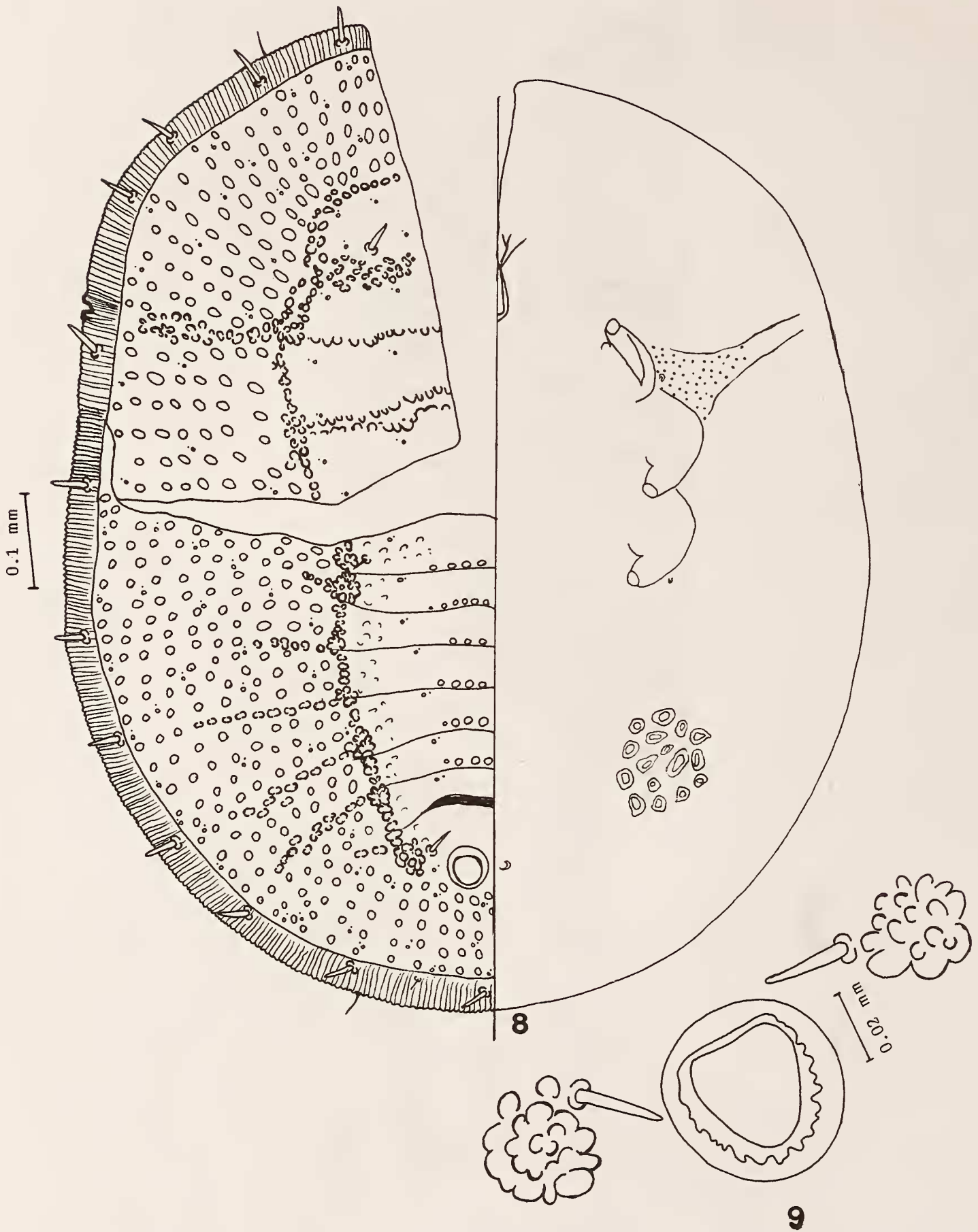


Fig. 8-9. *Dialeuronomada saklespurensis* sp. nov.
8. Pupal case; 9. Vasiform orifice with lateral papillae.

mesothoracic and meso-metathoracic sutures with papillae evident; abdominal segment sutures tuberculated. Pores and porettes sparsely distributed throughout dorsum. Longitudinal and transverse moulting sutures reach submargin. Subdorsum completely covered with round markings.

Vasiform orifice subcordate, with comb of teeth on its inner caudal and lateral margins, slightly longer than wide, 50 μm long and 47.5 μm wide; operculum 27.5-35 μm long and 27.5-32.5 μm wide, filling the orifice and concealing the lingula.

Ventral surface: Venter with round and polygonal markings; mouth parts, legs and spiracles evident; thoracic tracheal folds with stipples evident.

Host: *Dimocarpus longon* Lour. (Sapin-

daceae).

Material examined: Holotype: *Dimocarpus longon*, Saklespur (Karnataka), 4 February 1990, Coll. K. Regu.

Paratypes: Four pupal cases on slides bearing the same details as of holotype.

This species resembles *D. martini* Sundararaj and David (1991b) by the presence of enlarged papillae laterad of vasiform orifice and differs from that in the presence of round markings on dorsum and tubercles on abdominal segment sutures.

This species is named after the collection locality, Saklespur (Karnataka).

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REFERENCES

- SUNDARARAJ, R. & DAVID, B.V. (1991a): On the genera of *Asialeyrodes* Corbett and *Cockerelliella* gen. nov. from India *J. Bombay nat. Hist. Soc.* 88(3): 415-424.
SUNDARARAJ, R. & DAVID, B.V. (1991b): Ten new species of

- Dialeuronomada* Quaintance & Baker (Homoptera: Aleyrodidae) from India. *Hexapoda* 3 (1 & 2): 27-47.
TAKAHASHI, R. (1932): Aleyrodidae of Formosa, Part I. *Rep. Dep. Agric. Govt. res. Inst. Formosa* 59: 11-12.